C of C

CERTIFICATE OF MAILING 37 C.F.R. 1.8(a)

I hereby certify that this correspondence is being sent via first class United States mail to Commissioner of Patents, ATTN: Certificate of Correction Branch, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

Name of Person Signing Certificate: Mary E. Mitchell

10/13/05
Date

Mary E Mitchell
Signature

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:	§	Confirmation No.: 6216
R. Knox Pitzer Roy E. Barth Donald W. Hirsch	§ § §	
Filed: November 7, 2001	§	Art Unit: 3743
Patent No.: 6,905,566 B1	§	
Serial No.: 10/031,276	§	Examiner: Mark Eashoo, Ph.D.
For: ISOLATED TRACER HAVING CONTROLLED CONDUCTANCE RATE AND METHOD OF MAKING SAME	§ § § §	Docket No.: A99084WO

Commissioner for Patents
Certificate of Correction Branch
P.O. Box 1450
Alexandria, VA 22313-1450

REQUEST FOR CERTIFICATE OF CORRECTION OF PATENT
FOR PTO MISTAKE (37 C.F.R. § 1.322(a))

Attached, in duplicate, is PTO/SB/44 (also Form PTO-1050), with at least one copy being suitable for printing.

It is submitted that the U.S. Patent and Trademark Office is responsible for the typographical error in the issued patent (a copy of which is attached as Exhibit A). Line 2, word 9 of claim 7 (claim 6 in the original application -- Exhibit B) should be "linear" rather than "line" as issued. Accordingly, no fee should be charged to the patentees or their assignee for the corrections.

Issuance of a Certificate of Correction is believed appropriate and is respectfully solicited.

Please send the Certificate to the undersigned.

Respectfully submitted

Gregory M. Hasley, Reg. No. 40,640

Date: 10/13/05

AKIN GUMP STRAUSS HAUER & FELD LLP
1111 Louisiana, 44TH Floor
Houston, Texas 77002
Telephone: (713) 220-5800
Facsimile: (713) 236-0822

PTO/SB/44 (04-05)
Approved for use through 04/30/2007. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,905,566 B1

APPLICATION NO.: 10/031,276

ISSUE DATE : June 14, 2005

INVENTOR(S) : R. Knox Pitzer; Roy E. Barth; Donald W. Hirsch

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In claim 7, the word "line" should read -- linear--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Gregory M. Hasley, Akin Gump Strauss Hauer & Feld LLP
1111 Louisiana St., 44th Floor
Houston, Texas 77002-5200

OCT 2 4 2005

PTO/SB/44 (04-05)
Approved for use through 04/30/2007. OMB 0651-0033
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

(Also Form PTO-1050)

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 6,905,566 B1

APPLICATION NO.: 10/031,276

ISSUE DATE : June 14, 2005

INVENTOR(S) : R. Knox Pitzer; Roy E. Barth; Donald W. Hirsch

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In claim 7, the word "line" should read -- linear--.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

Gregory M. Hasley, Akin Gump Strauss Hauer & Feld LLP
1111 Louisiana St., 44th Floor
Houston, Texas 77002-5200

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

For pipe sizes larger than 10-inch NPS, use the results of the 10-inch pipe size.

The mathematical expressions have been proven to be substantially consistent with experimental test results for the various pipe sizes tested. Isolated steam tracers manufactured according to the present invention by the linear wrap, helical wrap or other insulation wrapping methods have predictable heat transfer rates for computer modeling and repeatable heat transfer rates from production run to production run.

Thus, the approximate conductance rate (C_T) for multiple pipe sizes can be calculated by the following mathematical expression for an isolated tracer having a base conductance rate of approximately 0.15 Btu/hr-ft-° F.:

$$C_T=0.15\times[1+\text{Outside Pipe Diameter, inches}]^{0.09}\times\text{Number of tracers,}$$

where the conductance value for pipes and other cylindrical objects equivalent to or larger than a nominal pipe size of 10 inches remains at the conductance value determined for the 10-inch pipe size.

An approximate conductance rate (C_T) for a heat transfer assembly can also be calculated by the following mathematical expression for an isolated tracer having a base conductance rate of approximately 0.23 Btu/hr-ft-° F.:

$$C_T=0.23\times[1+\text{Outside Pipe Diameter, inches}]^{0.125}\times\text{Number of Tracers.}$$

Again, the conductance value for pipes and other cylindrical objects equivalent to or larger than a nominal pipe size of 10 inches remains at the conductance value corresponding to the 10-inch pipe.

A third equation for calculating an approximate conductance rate (C_T) for a heat transfer assembly according to the present invention for an isolated tracer having a base conductance rate of approximately 0.35 Btu/hr-ft-° F.:

$$C_T=0.35\times[1+\text{Outside Pipe Diameter, inches}]^{0.20}\times\text{Number of Tracers.}$$

For pipes and other cylindrical objects equivalent to or larger than a nominal pipe size of 10 inches, the conductance value is again approximated as the conductance value determined for a 10-inch pipe.

A heat transfer assembly according to the present invention reduces steam consumption over bare convection tracing in the range of approximately 10% to 60%.

The foregoing disclosure and description of the invention are illustrative and explanatory thereof, and various changes in the materials as well as in the details of the illustrated apparatus and construction and method of operation may be made without departing from the spirit of the invention.

What is claimed is:

1. A method for making a heat transfer assembly having predictable and repeatable heat transfer rates, the assembly being adapted for mounting on a pipe, equipment or a vessel, comprising the steps of:

providing a tubular element;

covering the tubular element with a layer of insulating material;

wrapping the layer of insulating material with a tape-like material; and

tensioning the tape-like material so that the insulating material is compressed by the tape-like material to a predetermined diameter for providing a desired conductance output, wherein the desired conductance output is at least 10 percent greater than a pretensioned conductance output.

2. The method of claim 1, wherein the desired conductance output falls within a range of approximately 0.105 Btu/hr-ft-° F. to approximately 0.46 Btu/hr-ft-° F.

3. The method of claim 1, further comprising applying an outer jacket material over the tape-like material.

4. The method of claim 3, wherein said outer jacket material is an extruded silicone rubber.

5. The method of claim 1, wherein the tubular element is made of copper, steel, stainless steel, aluminum or other metallic or plastic materials suitable for use with saturated steam or other hot fluids.

6. The method of claim 1, wherein the insulating material is a flexible, compressible fiberglass or mineral wool.

7. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a line wrapping method.

8. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a helical wrapping method.

9. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a combination of the linear wrapping and helical wrapping methods where multiple layers of insulating material is required.

10. The method of claim 1, wherein the tape like material is an aluminized polymeric material or other types of metalized or unmetalized polymeric tapes, cords, fibers, or strips.

11. A method for making an isolated tracer having a predictable conductance rate, comprising the steps of:

passing a tube for conveying a heated fluid through a funnel-shaped die having a wide inlet and a narrow outlet;

passing an insulating material through the die such that the insulating material is compressed a first amount as the insulating material passes from the wide inlet of the die to the narrow outlet for conforming the insulating material to a cylindrical shape; and

compressing the insulating material a second amount after the insulating material passes through the narrow outlet for providing a predetermined thickness of insulating material so that a predetermined thermal conductance rate can be provided, wherein the difference in compression on the insulating material between the first amount and the second amount increases thermal conductance by at least 10 percent.

12. The method of claim 11, wherein the step of compressing the insulating material is provided by wrapping the insulating material with a tape-like material.

13. The method of clam 12, further comprising adjusting the tension on the tape-like material to provide a desired compression on the insulating material.

14. The method of claim 13, further comprising covering the tape-like material with a jacket of polymeric material.

15. A method for making an isolated tracer having a predictable conductance rate, comprising the steps of

passing a tube for conveying a heated fluid through a funnel-shaped die having a wide inlet and a narrow outlet;

passing an insulating material through the die such that the insulating material is compressed a first amount as the insulating material passes from the wide inlet of the die to the narrow outlet for conforming the insulating material to a cylindrical shape; and

compressing the insulating material a second amount after the insulating material passes through the narrow outlet for providing a predetermined thickness of insulating material;

CLAIMS:

1. A method for making a heat transfer assembly having predictable and repeatable heat transfer rates, the assembly being adapted for mounting on a pipe, equipment or a vessel, comprising the steps of:

providing a tubular element;

covering the tubular element with a layer of insulating material;

wrapping the layer of insulating material with a tape-like material; and

tensioning the tape-like material so that the insulating material is compressed by the tape-like material to a predetermined diameter for providing a desired conductance output.

2. The method of claim 1, wherein the conductance output falls within a range of approximately 0.105 Btu/hr-ft-°F to approximately 0.46 Btu/hr-ft-°F.

3. The method of claim 1, further comprising applying an outer jacket material over the tape-like material.

4. The method of claim 1, wherein the tubular element is made of copper, steel, stainless steel, aluminum or other metallic or plastic materials suitable for use with saturated steam or other hot fluids.

5. The method of claim 1, wherein the insulating material is a flexible, compressible fiberglass or mineral wool.

6. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a linear wrapping method.

7. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a helical wrapping method.

8. The method of claim 1, wherein the insulating material is wrapped around the tubular element by a combination of the linear wrapping and helical wrapping methods where multiple layers of insulating material is required.